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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

|           |   |  |   |                      |
|-----------|---|--|---|----------------------|
| Applicant | : | Steven M. Hurson                               | ) | Group Art Unit: 3732 |
|           |   |  | ) |                      |
| Appl. No. | : | 10/800,818                                     | ) |                      |
|           |   |  | ) |                      |
| Filed     | : | March 15, 2004                                 | ) |                      |
|           |   |  | ) |                      |
| For       | : | IMPLANT WITH INTERNAL<br>MULTI-LOBED INTERLOCK | ) |                      |
|           |   |  | ) |                      |
| Examiner  | : | Unknown  | ) |                      |

SECOND PRELIMINARY AMENDMENT

United States Patent and Trademark Office  
P.O. Box 2327  
Arlington, VA 22202

Dear Sir:

Before examination of the above-referenced application, enter the following amendments.

Amendments to the Specification begin on page 2 of this paper.

Amendments to the Claims are reflected in the listing of the claims which begins on page 3.

Remarks being on page 7 of this paper.

12/17/2004 INTESERL 00000013 10800810

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| 02 FC:1201 | 200.00 OP |

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Filed : March 15, 2004

**Amendments to the Specification**

Please replace paragraph number starting at page 1, line 4, with the following rewritten paragraph.

The present application is a continuation of U.S. Patent Application No. 09/670,708, filed September 27, 2000, now U.S. Patent No. 6,733,291, which claims priority and benefit under 35 U.S.C. §119(e) of U.S. Provisional Patent Application Serial No. 60/156,198, filed September 27, 1999.

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**Amendments to the Claims:**

Please cancel Claims 50 and 51 without prejudice. Please add Claims 52-68. Claims 1-36 were canceled in a previous amendment.

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1-36. (Canceled)

37. (Currently amended) A dental abutment for supporting a dental prosthesis on a dental implant, the abutment comprising:

an upper region comprising a bottom surface;

an interlock region extending below the bottom surface comprising a non-threaded cylindrical portion and plurality of semi-circular protrusions arranged around a periphery of the cylindrical portion, wherein the cylindrical portion has a first radius and the protrusions have a second radius, a ratio of the first radius to the second radius being between approximately 4:1[[.]] and approximately 2:1 and wherein the interlock region has a length measured from the bottom surface that is equal to a first distance; and

a non-threaded post extending below the interlock region; the post having a length measured from the bottom surface that is equal to a second distance.

38. (Previously presented) The dental abutment according to Claim 37, wherein the ratio of the first radius to the second radius is approximately 3:1.

39. (Previously presented) The dental implant according to Claim 37, wherein the first distance is greater than 1 millimeter.

40. (Previously presented) The dental abutment according to Claim 37, wherein the abutment further comprises an inner bore.

41. (Previously presented) The dental abutment according to Claim 40, wherein inner bore includes a first region and a second region, the first region being positioned below the second region and having a diameter smaller than the first region.

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42. (Previously presented) The dental abutment according to Claim 41, wherein inner bore includes a seat formed between the first and second regions.

43. (Previously presented) The dental abutment according to Claim 42, wherein the second region includes capture threads.

44. (Previously presented) The dental abutment according to Claim 43, wherein the capture threads are double threaded.

45. (Previously presented) The dental abutment according to Claim 37, wherein the second distance is greater than approximately 3 millimeters.

46. (Previously presented) The dental abutment according to Claim 45, wherein the first distance is greater than 1 millimeter.

47. (Previously presented) The dental abutment according to Claim 37, wherein the three protrusions are arranged around the perimeter of the interlock region such that each of the protrusions are approximately 120 degrees apart from one another.

48. (Previously presented) The dental abutment according to Claim 37, wherein the bottom surface of the abutment has a third radius and a ratio of the third radius to the second radius being between approximately 5:1 and 4:1.

49. (Previously presented) The dental abutment according to Claim 48, wherein the ratio of the third radius to the second radius is approximately 4.5:1.

50. (Canceled)

51. (Canceled)

52. (New) A prosthodontic component for mating with a dental implant, comprising:  
an upper region comprising a bottom surface;

an interlock region extending below the bottom surface, the interlock region configured to mate with an interlock chamber of a dental implant having a non-threaded cylindrical portion and at least three semi-circular channels arranged around a periphery of the cylindrical portion, wherein the cylindrical portion has a first radius and the channels have a second radius, a ratio of the first radius to the second radius being between approximately 4:1 and approximately 2:1 and wherein the interlock chamber of the dental implant has a length measured from the bottom surface that is equal to a first distance; and

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an inner bore extending through the prosthodontic component.

53. (New) The prosthodontic component to Claim 52, wherein the ratio of the first radius to the second radius is approximately 3:1.

54. (New) The prosthodontic component according to Claim 52, wherein the first distance is greater than 1 millimeter.

55. (New) The prosthodontic component according to Claim 52, wherein the three channels are arranged around the perimeter of the interlock chamber such that each of the channels are approximately 120 degrees apart from one another.

56. (New) A prosthodontic component for mating with a dental implant, the prosthodontic component comprising:

an upper region comprising a bottom surface;

an interlock region extending below the bottom surface comprising a non-threaded cylindrical portion and at least one semi-circular protrusions arranged around a periphery of the cylindrical portion, wherein the cylindrical portion has a first radius and the at least one protrusion has a second radius, a ratio of the first radius to the second radius being between approximately 4:1 and approximately 2:1 and wherein the interlock region has a length measured from the bottom surface that is equal to a first distance;

a non-threaded post extending below the interlock region; the post having a length measured from the bottom surface that is equal to a second distance; and

and an inner bore extending through the dental abutment.

57. (New) The prosthodontic component according to Claim 56, wherein the ratio of the first radius to the second radius is approximately 3:1.

58. (New) The prosthodontic component according to Claim 56, wherein the first distance is greater than 1 millimeter.

59. (New) The prosthodontic component according to Claim 56, wherein the second distance is greater than approximately 3 millimeters.

60. (New) The prosthodontic component according to Claim 59, wherein the first distance is greater than 1 millimeter.

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61. (New) The prosthodontic component according to Claim 56, wherein the bottom surface of the prosthodontic component has a third radius and a ratio of the third radius to the second radius is between approximately 5:1 and 4:1.

62. (New) The prosthodontic component according to Claim 61, wherein the ratio of the third radius to the second radius is approximately 4.5:1.

63. (New) A dental abutment for supporting a dental prosthesis on a dental implant, the abutment comprising:

an upper region comprising a bottom surface;

an interlock region extending below the bottom surface comprising a non-threaded cylindrical portion and at least three semi-circular protrusions arranged around a periphery of the cylindrical portion, wherein the cylindrical portion has a first radius and the protrusions have a second radius, a ratio of the first radius to the second radius being between approximately 4:1 and approximately 2:1 and wherein the interlock region has a length measured from the bottom surface that is equal to a first distance.

wherein the bottom surface of the abutment has a third radius and a ratio of the third radius to the second radius is between approximately 5:1 and 4:1.

64. (New) The dental abutment according to Claim 63, wherein the ratio of the first radius to the second radius is approximately 3:1.

65. (New) The dental abutment according to Claim 63, wherein the abutment further comprises an inner bore.

66. (New) The dental abutment according to Claim 63, wherein the at least three protrusions are arranged around the perimeter of the interlock region such that each of the protrusions are approximately 120 degrees apart from one another.

67. (New) The dental abutment according to Claim 63, wherein the ratio of the third radius to the second radius is approximately 4.5:1.

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**REMARKS**

Before examination, please enter the above amendments.

Respectfully submitted,

KNOBBE, MARTENS, OLSON & BEAR, LLP

Dated: December 13, 2004

By: 

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Docket No.: NOBELB.032C1

Customer No.: 20,995



## AMENDMENT / RESPONSE TRANSMITTAL

Applicant : Steven M. Hurson  
 App. No. : 10/800,818  
 Filed : March 15, 2004  
 For : IMPLANT WITH INTERNAL  
 MULTI-LOBED INTERLOCK  
 Examiner : Unknown  
 Art Unit : 3732

## CERTIFICATE OF MAILING

I hereby certify that this correspondence and all  
 marked attachments are being deposited with the  
 United States Postal Service as first-class mail in  
 an envelope addressed to: Commissioner for  
 Patents, P.O. Box 1450, Alexandria, VA 22313-  
 1450, on

December 13, 2004

(Date)  
  
 Rabinder N. Narula, Reg. No. 53,371

Mail Stop Amendment  
 Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

Sir:

Transmitted herewith for filing in the above-identified application are the following enclosures:

(X) Second Preliminary Amendment in 7 pages.

The fee has been calculated as shown below:

| FEE CALCULATION    |             |              |                      |              |
|--------------------|-------------|--------------|----------------------|--------------|
| FEE TYPE           |             | FEE CODE     | CALCULATION          | TOTAL        |
| Total Claims       | 29 - 20 = 9 | 1202 (\$50)  | 9 x 50 =             | \$450        |
| Independent Claims | 4 - 3 = 1   | 1201 (\$200) | 1 x 200 =            | \$200        |
|                    |             |              | <b>TOTAL FEE DUE</b> | <b>\$650</b> |

- (X) A check in the amount of \$650 is enclosed.  
 (X) Return prepaid postcard.  
 (X) Please charge any additional fees, including any fees for additional extension of  
 time, or credit overpayment to Deposit Account No. 11-1410.

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